

CLAIM AMENDMENTS

Claim 1 (previously amended):

An up-cut chop saw, comprising:

a frame;

a work surface supported by the frame and adapted to support a workpiece;

a rotatable blade configured to cut a workpiece on the work surface by moving from below the work surface to a position where at least part of the blade is above the work surface, where the blade is electrically isolated so that it may carry an electric signal;

at least one motor configured to drive the blade;

at least one actuating mechanism operable to move the blade upward to a position where at least part of the blade is above the work surface;

a detection system adapted to impart an electric signal to the blade and to monitor the signal for a predetermined change indicative of contact between a person and the blade; and

a reaction system configured to retract the blade from a position where at least part of the blade is above the work surface to a position where the blade is completely below the work surface upon detection by the detection system of the predetermined change indicative of contact between a person and the blade.

Claims 2-8 (cancelled).

Claim 9 (previously amended):

The saw of claim 1, where the actuating mechanism is further operable to lower the blade below the work surface after the blade has been moved to a position where at least part of the blade is above the work surface, and where the reaction system is configured to operate the actuating mechanism to lower the blade upon detection by the detection system of the predetermined change indicative of contact between a person and the blade.

Claim 10 (original):

The saw of claim 9, where the actuating mechanism includes at least one fluid-actuated cylinder operable to raise and lower the blade.

Claim 11 (currently amended):

An up-cut chop saw, comprising:

a frame;

a work surface supported by the frame and adapted to support a workpiece;

a rotatable blade configured to cut a workpiece on the work surface by moving from below the work surface to a position where at least part of the blade is above the work surface, where the blade is electrically isolated so that it may carry an electric signal;

~~The saw of claim 9, further comprising~~ at least one brace member coupled to move upward with the blade,

at least one motor configured to drive the blade;

at least one actuating mechanism operable to move the blade upward to a position where at least part of the blade is above the work surface;

a detection system adapted to impart an electric signal to the blade and to monitor the signal for a predetermined change indicative of contact between a person and the blade; and

a reaction system configured to retract the blade from a position where at least part of the blade is above the work surface to a position where the blade is completely below the work surface upon detection by the detection system of the predetermined change indicative of contact between a person and the blade;

where the actuating mechanism is further operable to lower the blade below the work surface after the blade has been moved to a position where at least part of the blade is above the work surface; where the reaction system is configured to operate the actuating mechanism to lower the blade upon detection by the detection system of the predetermined change indicative of contact between a person and the blade; and where the reaction system includes a brake mechanism configured to engage the brace member and stop the upward motion of the blade upon detection by the detection system of the predetermined change indicative of contact between a person and the blade.

Claim 12 (currently amended):

An up-cut chop saw, comprising:

a frame;

a work surface supported by the frame and adapted to support a workpiece;

a rotatable blade configured to cut a workpiece on the work surface by moving from below the work surface to a position where at least part of the blade is above the work surface, where the blade is electrically isolated so that it may carry an electric signal;

The saw of claim 1, further comprising at least one brace member coupled to move upward with the blade,

at least one motor configured to drive the blade;

at least one actuating mechanism operable to move the blade upward to a position where at least part of the blade is above the work surface;

a detection system adapted to impart an electric signal to the blade and to monitor the signal for a predetermined change indicative of contact between a person and the blade; and

a reaction system configured to retract the blade from a position where at least part of the blade is above the work surface to a position where the blade is completely below the work surface upon detection by the detection system of the predetermined change indicative of contact between a person and the blade; and where the reaction system includes

a brake mechanism configured to engage the brace member and stop the upward motion of the blade upon detection by the detection system of the predetermined change indicative of contact between a person and the blade.

Claim 13 (cancelled).

Claim 14 (previously amended):

The saw of claim 1, further comprising a rotatable spindle, where the blade is mounted on the spindle, and where the spindle and blade are electrically insulated from the frame.

Claim 15 (previously amended):

An up-cut chop saw, comprising:

a frame having an upper surface configured to support a workpiece;

a rotatable spindle;

a circular blade mounted on the spindle;

an actuating mechanism configured to move the spindle upward to raise the blade to a position where at least part of the blade is above the upper surface;

a detection system configured to detect accidental contact between a user and the blade; and

a reaction system configured to retract the spindle and blade from a position where at least part of the blade is above the upper surface to a position where the blade is completely below the upper surface upon

detection of accidental contact between a user and the blade by the detection system.

Claim 16 (original):

The saw of claim 15, where the actuating mechanism includes a pneumatic cylinder.

Claim 17 (previously amended):

The saw of claim 16, further comprising a control system configured to operate the pneumatic cylinder, and where the control system is configured to operate the pneumatic cylinder to move the spindle downward upon detection of accidental contact between a user and the blade by the detection system.

Claim 18 (original):

The saw of claim 15, where the actuating mechanism includes a hydraulic cylinder.

Claim 19 (previously amended):

The saw of claim 18, further comprising a control system configured to operate the hydraulic cylinder, and where the control system is configured to operate the hydraulic cylinder to move the spindle downward upon detection of accidental contact between a user and the blade by the detection system.

Claims 20-24 (cancelled).

Claim 25 (withdrawn):

A method of controlling an up-cut chop saw, where the saw includes a work surface adapted to support a workpiece to be cut and a rotatable blade configured to cut a workpiece on the work surface by moving from below the work surface to a position where at least part of the blade is above the work surface, the method comprising:

moving the blade upward to a position where at least part of the blade is above the work surface;

detecting contact between the blade and a person when at least part of the blade is above the work surface; and

stopping upward motion of the blade when contact between the blade and a person is detected.

Claim 26 (withdrawn):

The method of claim 25 where the limitation of stopping upward motion of the blade happens within at least 20 milliseconds after detecting contact between the blade and a person.